

Amendments to the Claims

1. *(Original)* A method of decoding a symbol sequence in a received DS-CDMA signal, comprising iterative calculation of a hard-decision vector, using a decision threshold having a value based on the probability of each ternary alphabet element of each symbol in the hard-decision vector.

2. *(Currently Amended)* A method according to claim 1, comprising the steps of:

- demodulating ~~(301)~~ the received signal, thereby providing a symbol sequence,
- calculating ~~(302)~~ a matrix product of the symbol sequence and the Hadamard decoding matrix,
- calculating ~~(303)~~ an estimate of a decision threshold, assuming equal probability of the ternary alphabet element of each symbol in the symbol sequence,
- calculating ~~(304)~~ a hard-decision vector using the calculated decision threshold,
- calculating ~~(305)~~ an estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector,
- calculating ~~(306)~~ a decision threshold using the estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector,
- iterating ~~(307)~~ the steps of calculating a hard-decision vector, calculating an estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector and calculating a decision threshold using the estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector, until the calculation of a decision threshold converges or the number of iterations reaches a predetermined maximum number of iterations.

3. *(Currently Amended)* A method according to claim 2, wherein the symbol sequence is a sequence of acquisition indicators ~~(AI)~~ in an acquisition indicator channel ~~(AICH)~~ and further comprises the step of:

- selecting ~~(308)~~ the AI of interest from the calculated hard-decision vector using a predetermined index.

4. *(Currently Amended)* User equipment ~~(101, 200)~~ capable of decoding a symbol sequence in a received DS-CDMA signal, comprising means ~~(203, 205, 207, 209, 211)~~ for iterative calculation of a hard-decision vector, using a decision threshold having a value based on the probability of each ternary alphabet element of each symbol in the hard-decision vector.

5. *(Currently Amended)* User equipment ~~(101, 200)~~ according to claim 4, comprising means ~~(203, 205, 207, 209, 211)~~ for:

- demodulating the received signal, thereby providing a symbol sequence,
- calculating a matrix product of the symbol sequence and the Hadamard decoding matrix,
- calculating an estimate of a decision threshold, assuming equal probability of the ternary alphabet element of each symbol in the symbol sequence,
- calculating a hard-decision vector using the calculated decision threshold,
- calculating an estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector,
- calculating a decision threshold using the estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector,
- iterating the steps of calculating a hard-decision vector, calculating an estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector and calculating a decision threshold using the estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector, until the calculation of a decision threshold converges or the number of iterations reaches a predetermined maximum number of iterations.

6. *Currently Amended* User equipment according to claim 5, where the symbol sequence is a sequence of acquisition indicators ~~(AI)~~ in an acquisition indicator channel ~~(AICH)~~ and further comprises:

- means ~~(209)~~ for selecting the AI of interest from the calculated hard decision vector using a predetermined index.